

# Aquifer-River Interchange

A strong relationship between the Aquifer and the Spokane River is present throughout the river's length, from Lake Coeur d'Alene to the confluence with the Little Spokane River. Although the Aquifer-River interchange is complex, studies of the river have identified four types of interaction: gaining, losing, transitional and minimal.

In areas along the Spokane River where the water table is far below the bed of the river,

water percolates through the gravelly bed and downward into the Aquifer, recharging the groundwater system. In these areas the reach of the river is losing water, and these reaches are shown as red on this image. This is the typical relationship between the river and Aquifer throughout Idaho and into Washington to near Flora Road.

In other areas where the water table in the adjacent river banks is higher than the river bed, the Aquifer loses water through springs and seeps and ultimately adds volume to the river flow. In these areas the reach of the river is gaining, and these reaches are shown as purple on this image. The reach between Sullivan Road and the Centennial Trail Bridge is a gaining reach.

In a few areas, the Aquifer-River interaction is either transitional or minimal. Transitional reaches vary between gaining and losing depending upon the magnitude of the river flow,

and these reaches are shown as green on this image. In minimal reaches the river and the Aquifer interact very little, and these reaches are shown as light blue on this image.

Part of the water in the Little Spokane River comes from outflow from the Aquifer. Along the Little Spokane River's gaining reach (see image on this page) about 250 cubic feet per second of water is added to the river from the Aquifer. That is why the Little Spokane River flows consistently throughout the summer months and has cold water temperatures.

Understanding the Aquifer-River interchange is very important to Aquifer sustainability and Spokane River low discharge issues. Water withdrawals from the Aquifer can reduce river flows, and during periods of low flow in the Spokane River additional loss of water to the Aquifer could impair the beneficial uses of the river.

